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FARMER & GARDENER.

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TERMS.—The FARMER AND GARDENER is published *semi-monthly*, each number containing 16 royal octavo pages, at *One Dollar* per annum per copy; *Seventy-five Cents* per copy for Four and less than Ten copies; and *Fifty Cents* per copy for Ten or more copies to the same Post Office. All subscriptions IN ADVANCE.

INDIANA FARMER & GARDENER.

Indianapolis, Saturday, October 11, 1845.

☞ **Four numbers will complete the first volume of the Indiana Farmer and Gardener; and these will be issued rapidly, that we may have time to take a good start on the next volume. We are preparing to begin the second volume with new type, on superior paper, and we wish our friends to prepare themselves to receive it. The *terms* will remain the same, while the *matter* will be increased.**

☞ **Aaron Aldridge has presented us with a sweet potato weighing *five pounds!* Mr. Z. Ragan, will you let us know how you have succeeded? We have been busy for two days eating it.**

☞ **The *Genese Farmer* has not been received at this office for two months. Is it sent to us?**

☞ **The *Brookville American* has not been received since it gave us an article on wheat, and that was "a long time ago."**

Settling Accounts, and Making Change.

The New York Tribune copies an article headed "*Getting rich on poor land and poor on rich land*," and, with a compliment, credits it to the *Ohio Cultivator*. Friend Bateham, you must divide with us; we know that the *compliment* is yours; but you know that the *article* is ours.

The New Albany Gazette took, at one time, from our paper, fourteen kinds of apples without paying for them, or telling any body where he got them. It was done in kindness; for if other folks should find out where he got such pickings, they might come and serve us likewise.

Several papers in the north of Indiana copy our articles and credit them to the Prairie Farmer. This seems to say that agricultural matter, worth copying, must come, of course, from the Prairie Farmer; a compliment which that paper abundantly warrants. We wish, that for awhile, these papers would copy some of *its* best articles and credit them to us. We should thus gain by a system of wrong credits.

Potato Malady.

We have disastrous tidings from Europe respecting, what may now be almost called, the *universal* prevalence of the potato malady. It has this season been severely experienced in France and Germany. The Paris correspondent of the National Intelligen-

cer — Robert Walsh — states this crop to constitute *one-fourth part* of the food of France. Charles Morren, Prof. of Rural Economy and Agriculture in the University of Leige ascribes the disease to the "action of a parasite mushroom, extremely thin and prolific. He particularly describes it, after having closely studied the whole action of this *botrydis*." This was the theory advanced by J. E. Teschemacher, of Boston, and supported by some apparently satisfactory experiments and microscopic examinations.

Shiftless Tricks.

1. To let the cattle fodder themselves at the stack; they pull out and trample more than they eat. They eat till the edge of appetite is gone, and then daintily pick the choice parts; the residue, being coarse and refuse, they will not afterwards touch.

2. To sell half a stack of hay and leave the lower half open to rain and snow. In feeding out, a hay knife should be used on the stack; in selling, either dispose of the whole, or remove that which is left to a shed or barn.

3. It is a shiftless trick to lie about stores and groceries, arguing with men that you have *no time*, in a new country, for nice farming—for making good fences; for smooth meadows without a stump; for draining wet patches which disfigure fine fields.

3. To raise your own frogs in your own yard; to permit, year after year, a dirty, stinking, mantled puddle to stand before your fence in the street.

4. To plant orchards, and allow your cattle to eat the trees up. When gnawed down, to save your money, by trying to nurse the stubs into good trees, instead of getting fresh ones from the nursery.

5. To allow an orchard to have blank spaces, where trees have died; and when the living trees begin to bear, to wake up and put young whips in the vacant spots.

6. It is very shiftless to build your barnyard so that every rain shall *drain* it; to build your privy and dig your well close together; to build a privy of more than seven feet square—some in these parts have it of the size of the whole yard; to set it in the most exposed spot on the premises; to set it at the very far end of the garden, for the pleasure of traversing mud-puddles and labyrinths of wet weeds in rainy days.

7. It is a dirty trick to make bread without washing one's hands after cleaning fish or chickens; to use an apron for a handkerchief; to use a veteran handkerchief just from the wars for an apron; to use milk-pans alternately for wash-bowls and milk. To wash dishes and baby linen in the same tub, either alternately or together; to chew snuff while you are cooking, for sometimes food will chance to be too highly spiced. We have a distinct but unutterable remembrance of a cud of tobacco in a dish of *hashed pork* —but it was before we were married!

A lady of our acquaintance, at a boarding house, excited some fears among her friends, by foaming at the mouth, of madness. In eating a hash (made, doubtless, of every scrap from the table, not consumed the day before) she found herself blessed with a mouthful of *hard soap*, which only lathered the more, the more she washed at it. It is a filthy thing to comb one's hair in a small kitchen in the intervals of cooking the breakfast; to use the bread trough for a cradle—a thing which we have undoubtedly seen; to put trunks, boxes, baskets, with sundry other utensils, under the bed where you keep the cake for company; we have seen a dextrous housewife whip the bed-spread aside, and bring forth, not what we feared, but a loaf-cake!

It is a dirty trick to wash childrens' eyes in the pudding dish; not that the sore eyes, but subsequent puddings, will not be benefitted; to wipe dishes and spoons on a hand-towel; to wrap warm bread in a dirty table-cloth; to make and mould bread on a table innocent of washing for weeks; to use dirty table-cloths for *sheets*, a practice of which we have had experimental knowledge, once at least, in our lives.

The standing plea of all slatterns and slovens is, that "every body must eat a *peck* of dirt before they die." A peck! that would be a mercy, a mere mouthful, in comparison of cooked cart-loads of dirt which is to be eaten in steam-boats, canal-boats, taverns, mansions, huts and hovels.

Indexes---Johnson's Agricultural Chemistry.

In no respect is American Book-making more vexatiously inferior to English and European, than in the matter of *Indexes*. A book that is to be *read* and not consulted afterwards, requires no Index. A work of reference is almost useless without one; and it needs to be minute and systematic in proportion to the number of facts embodied in the work. Take for example Johnson's Agricultural Chemistry as published by Wiley & Putnam, New York. The work comprises several courses of lectures, and was originally published in England, in detached parts. But now it forms a complete work; and is an immense repository of the most valuable facts and reasonings upon Agricultural topics. Every page is crowded with facts, to which one wishes again and often to refer. The only help for reference is a meagre, skeleton-outline of the *subject* of each chapter, prefixed to the several parts of the work. There is no general Index; and, unless a man has an extraordinary memory, he can find nothing that he has read without a regular outfit and exploration for it. An Index would have pointed its finger to the very facts, in search of which we have wasted hours; hours, which we could ill afford to spare. Take a single example. The facts respecting wheat, the grain and cultivation, are scattered through *four parts*, and in a compass of 700 pages; and there is not a hint in the index by which you can guess where in this vast range a specific fact is to be found! This is not the worst; we have to *hunt for the table of contents*; for there are four of them, and three are in the body of the book! A man might almost as well search for a particular buffalo out of all the herds that pasture on all the prairies of North America. It was the business of Messrs. Wiley & Putnam to have put the book into some man's hand, before the compositor touched a letter of it, who should frame a large and elaborate Index. As it is, if some publisher would give the public an indexed edition we believe it would drive this current one out of market. We are obliged, while reading, to form an Index for ourselves as we go along. While upon this subject we will add a word upon Indexes to *periodicals*. We have four volumes of the (Baltimore) Farmer and Gardener, 1834—1838 without any Index at all; and the immense body of facts stored up in that time and space, we are permitted to *hunt* for, and sometimes to *find*. For instance, on the receipt of Mr. Judah's valuable article on the Fly-weevil, we desired to ascertain whether similar observations had been made at the East; and to do it, were obliged to look page by page through each mortal volume, from 1834 to 1838; and we found nothing at last! There is no doubt that editors are patient men; but there is a limit even to an editor's patience; and this Baltimore Farmer and Gardener, and Johnson's Chemistry have several times brought us up so near to the boundary of ours, that we could see over.—Hovey's Magazine of Horticulture has a "table of contents" but no general Index. I wish to refer to "Zinc Labels." I recollect somewhere in the work to have seen them noticed; but was it in Original Communications, or in the editor's Reviews, or was it Miscellaneous Intelligence? for these are the heads under which, in the table of contents, all facts are ranged. This sort of table seems to be founded on the principle that if a man remembers just what he wishes, and knows very nearly when to look for it, he shall be told; but if the fact is rather shadowy in his memory, and he has no idea of its location, he shall have no help. It is much too litteral an adhesion to the declaration 'to him that *hath* shall be given; but from him that *hath not* shall be taken away even that which he seemeth to have.' The edition of Hibbert and Buist's Flower Garden Directory which we use (1832) sets forth in its title page that it has a 'general Index.' The book has 375 large octavo pages, and the 'General Index' is *one page* long! The letter A has *three* articles under it, B has *three*, C has *seven*, D has *three*, E *three*, F *three*, I *two*, and O *one*, &c. Stewart's Stable Economy, (Appleton N. Y.) is a fine contrast to these books whose contents are traps to catch a man's patience, and whose General Indexes are *so* general as to contain nothing special.

But we must not empty all the vials of our wrath on our poor innocent readers who never make books. This would be like the

practice of some preachers, who give the few faithful hearers who *are* present, in spite of wind and weather, a most unmerciful drubbing in behalf of those who are absent.

Will you send us

1. A plan of making *cheap* sheds for sheltering cattle. In particular, a shed to stand off in the fields, for the accommodation of a a pretty large stock.

2. The best method of keeping cattle through the winter which are to be turned off in the spring as fat beeves.

3. The best way of preserving vegetables through the winter, when one has no cellar.

4. The best method of managing bees in the winter.

5. Will not some of our readers who have succeeded well in preserving sweet potatoes through the winter, give us their method of doing it? It often happens, that persons *know how others keep them*, without having had any experience themselves. Let such tell what they have *seen*.

Sweet Potatoes.

Will our editor please to tell us whether the vines should be prevented from taking root; and to give us the phytological reason for the practice he may recommend? Farmers differ in their instructions on this subject. And while on the question of radicating vines, will he please to say why pumpkins, cucumbers, and other cucurbitaceous plants *should be* allowed to strike root, at every joint? J. T. P.

Although our practice has been more extensive, and is more skilful, in eating sweet potatoes than in raising them, we yet adventure some remarks: No root can live and grow without food from the leaf; if the tops be permitted to root, so much nutriment is subtracted from the tubers as is diverted to these new roots. Those who are best skilled, in this region, raise their vines up so as to detach the roots, but do not twist them round the hill; which, by crushing or covering the leaves, would render the vines unhealthy.—As to vines of the *Cucurbitaceæ*, their fruit not being under ground, it is not necessary that such an amount of prepared sap should go to the root as if tubers were formed.—There is, in such vines, a great liability to disease and injury near the hill. The vines shrink and dry near the base; and however flourishing the running end may otherwise be, it is destroyed. If roots are secured at several points along the vine, we remove the chances of its prematurely dying, without withdrawing any sap necessary for the maturation of its fruit.

Manngement of Bottom Lands.

Almost every kind of soil requires a management of its own. That proper for clays, and that proper for bottom-lands, cannot be interchanged. Bottom lands are, usually, composed largely of vegetable matter and sand; and are therefore light, and easy to work; yet, as they are now managed, they admit a less variety of crops, than the tougher, and more unmanageable clay lands.

Bottom-lands for corn.—Our corn-lands, strictly so called, consist of rich intervales and river bottoms. On these corn is raised year after year, without manuring, fallowing, clover, or any change; but one constant, successive, corn, corn, corn. It is supposed that corn may be had for an indefinite period, so far as mere exhaustion of the soil is concerned, if the right course is pursued. Some of the best farmers in this region *hog* their corn lands. *Hogging*, is turning the hogs in upon the ripe corn, and letting them harvest it in their own way. The saving of labor of gathering the corn and feeding it out is very great. Some single farmers fatten from one to five hundred head of hogs; but if this number were fed by hand, and the grain gathered for them, it would require a force which would eat up the profits. When the fatting hogs have eaten off the field (temporary fences divide large fields into enclosures of convenient size) they are turned into another, and the stock-hogs for another year, are let in to glean and root for the waste and trampled corn. In this way nothing is lost.

This method *takes very little off from the land;* for the droppings of the hogs returns a great amount of food for the soil; and the corn stocks being burned or turned under, the land continues in good heart. Land being hogged will be *free from cut-worms* for the continual rooting of the stock-hogs,

which continues until the ground freezes, throws up the eggs or insect to be destroyed by the winter. This method of cultivation is peculiarly suited to large farms, when extensive tracts of ground are kept under the plow.

But in the course of eight or ten years, this process renders the soil extremely light. The action of frost upon it, after the hogs have snout-plowed it, leaves it in the spring as light and dry as an ash-heap. The corn will still *grow* as well, but every high wind will throw it down; the soil has not tenacity enough to hold up its crop. *Clovering* has been resorted to by some good farmers as a remedy; but, without pretending to know certainly, we suspect that clover will not fully answer the object. Clover on hard soils, separates the particles and renders the ground lighter, and adds vegetable matter to its composition. This is not what bottom land needs. It is *too* light, and rich enough in vegetable matter.

We believe a better course will be found in putting

Bottom-lands to Small Grain. To be sure, there are difficulties in the way of this; but good farming is nothing but a compromise of difficulties. If the month of May be cold and backward, wheat will do well and yield freely. This past season has suited well for wheat on bottom-lands. Mr. James McIlvain raised a fourteen-acre field of wheat on bottom land, this year, which measured thirty bushels to the acre; and weighed sixty-five pounds to the bushel. But if the spring is forward, May warm and wet, the grain will run rank, break down when the head begins to fill, and, of course, the berry, however plump and well it might have looked in the milk, will, after it falls, for want of nourishment, light, and air, shrink and shrivel. But even in such springs, might not an over rankness be prevented by pasturing the grain; or even, mowing it, when, as it sometimes happens, it gets ahead of what cattle are put upon it. But, at the worst, the grain is not lost; for if it lodges, and is spoiled for the sickle, hogs may be turned upon it and they will thrive well.

But now comes the advantage of small grain to the soil, which will be the same whether the crop is reaped or hogged. The straw or stubble, in either case, remains upon the ground. This should not be *plowed in*, but *burned, and the ashes plowed under*. To do this a strip of eight feet should be plowed about the whole field; and fire put to it, *on every side at once*, so that it may burn towards the centre; for fire, driven across a field, would leap many feet of open space at a fence. The more stubble the better, and the more weeds the better. The ashes will give to the soil just what it lacks, cohesion or firmness, and moisture. For, to make a dry soil moist, requires some substance to be added which having an affinity for moisture shall attract and retain it. This is the nature of wood or straw ashes. Mr. McIlvain, who will recognise in the above much of his own practical experience, mentioned to us a singular fact in corroboration of this reasoning. Having a very heavy wheat or oat stubble on a bottom-land field, which made it very hard for the plow, he burned it over; but a smart thunder storm coming suddenly up, the fire was extinguished, leaving about five acres in the middle of the piece, unburned. The whole field was then plowed. It was found that the soil in the part burned over was more firm, and moist, all the ensuing summer; and the corn more even, and darker colored, than that upon the five acres which escaped the fire, and whose stubble had been plowed in.

At all events, there can be no doubt that wood ashes would be very advantageous to bottom-lands. And we are persuaded that such soils may be kept in wheat and corn for any length of time, if thus managed. In conclusion, corn your bottom lands till they are too light, hogging instead of harvesting them; then put in wheat or oats; leave the stubble long, burn it over, and put it into wheat again or to corn as the case may be.

Improve rather by other men's errors, than find fault with them.

He is the only rich man who understands the use of wealth.

There is no more faithful or pleasant friend than a good book.

He who loves to employ himself well, can never want something to do.

Select List of Apples--Winter Apples.

(*Concluded from page 257.*)

15. Gloria Mundi or *Monstrous Pippin.* Tree, one of the most upright, top close, and resembling the pear. Wood medium sized, healthy, vigorous growth, wood ripens early, not subject to frost-blight; bears on moderately young trees. It works well from the bud, and also extremely well grafted on roots, and grows strait and finely for nursery purposes. Fruit very large, green, changes when dead-ripe to a yellowish white. Flavor mild, subacid; flesh melting and spicy. Ripens in November, at the same time with the Golden Russet, but will not keep as long. A native.

16. Black Apple. Tree low, spreading, and round topped; wood of medium vigor, healthy, ripens early, and not subject to frost-blight. Grafts on the root kindly; not so favorable for budding as the No. 15; bears remarkably young, and abundantly to a fault. Fruit medium sized; color very dark red, almost black, with grey rusty spots about the stem; flesh tender, breaking; moderately juicy, flavor rather sweet, though not a real sweet apple. No apple would stand fairer as an early winter fruit, were it not for a peculiar, dry, raw taste, somewhat resembling the taste of uncooked corn meal. Ripens from November to January. It is a native.

17. Newton Spitzenburg. Tree, not large, upright but not compact, top open; wood of medium size and vigor of growth; healthy, ripens early, and yet, now and then, it takes the frost-blight; bears moderately young, every other year, very abundantly; grafts well on the root, buds only moderately well, good for nursery handling. Fruit, varying much in size, but often large, flesh melting, juicy; flavor rich, spicy, subacid; ripens from November to January.

18. Rhode Island Greening. Tree large, very spreading and drooping, grows vigorously, healthy, ripens early, not subject to frost-blight; bud takes well; but, whether grafted on the root, or budded, it will plague the nurseryman by its disposition to spread and twist about like a quince bush. It should be budded on strong stocks at the height at which the top is to be formed; but it always overgrows the stock. Fruit very large, color green, with cloudy spots dotted with pin-point black specks; flesh breaking, tender and juicy: flavor mild, rich, subacid; a very popular fruit. Ripens from November to January.

19. Hubbardston Nonesuch. Admirable in nursery; works well on root or by bud. We give Downing's description, as it has not fruited in this region.

"A fine, large, early winter fruit, which originated in the town of Hubbardston, Mass., and is of first rate quality. The tree is a vigorous grower, forming a handsome branching head, and bears very large crops. It is worthy of extensive orchard culture.

"Fruit large, roundish oblong, much narrower near the eye. Skin smooth, striped with splashes, and irregular broken stripes of pale and bright red, which nearly cover a yellowish ground. The calyx open, and the stalk short, in a russetted hollow. Flesh yellow, juicy, and tender, with an agreeable mingling of sweetness and acidity in its flavor. October to January."

20. Minister. We give Manning's description:

"This fine apple originated in Rowley, Mass. The size is large, the form oblong like the Bellflower, tapering to the eye, with broad ridges the whole length of the fruit, the skin a light greenish yellow, striped with bright red, but the red seldom extends to the eye; flesh yellow, light, high flavored and excellent. This is one of the very finest apples which New England has produced. It ripens from November to February, and deserves a place in every collection of fruits, however small. This apple received its present name from the circumstance of the late Rev. Dr. Spring, of Newburyport, having purchased the first fruit brought to market."

21. Vanderveer Pippin. Tree large, one of the most vigorous, spreading, but not drooping; ripens its wood late, occasionally touched with frost-blight and liable to burst at the surface of the ground during the winter. Bears young, every year, and very abundantly. Buds well, grafts well on the root, grows off strongly, forms a top readily, and will please nurserymen. Fruit large, more uniformly of one size all over the tree than any in the orchard; shape of fruit flat; color, red stripes on a yellow, russety ground. Flesh coarse, gritty; flavor strong, penetrating, without aroma; December to March.

This fruit is remarkable for having almost evrey good quality of tree and fruit, and being notwithstanding a third-rate apple. The tree is hardy, its bloom, from peculiar hardiness, escapes injury from frost, and even a second set of blossoms put out, though feeble ones, if the first are destroyed. The fruit is comely, cooks admirably, keeps well; but a certain sharpness and coarseness will always make it but a second or third rate fruit. No tree is sought by farmers in this region, with more avidity. It origin is doubtful. Brunson, of Wayne county, brought it to Indiana, and all our nurseries trace their stock to his. It was carried for the first time to New Jersey, by quakers visiting this region, from his orchard. It should have been mentioned, that it holds its age remarkably well, very old trees producing as largely, and as fair, sound fruit as when young.

22. Yellow Belle Fleur, or *Bellflower*. Tree spreads and droops more than any tree of the orchard, the Newark pippin, perhaps, excepted; wood very slender and whip like, healthy, ripens early, not subject to frost-blight, grafts well on the root, but is rather tender during the first winter when so worked; buds well, but from its drooping, sprawling habit, is hard to form into a top. Bears moderately young, (not so young as the white;) abundantly. Flesh melting and tender and juicy; flavor fine and delicate rather than high; color deep yellow when ripe; ripens from December to March. One of the most deservedly popular of winter apples, and always saleable in all markets.

23. White Belle Fleur. This apple is cultivated in Ohio under the names of *Hollow-cored pippin*, *Ohio favorite*, and, by the Cincinnati pomologists, of *Detroit*. It is also the *Cumberland Spice* and *Monstrous Belleflower* of Coxe. It was brought to the west by Brunson, of Wayne county, Indiana, and thence disseminated in every direction; and it may be called *the* Belle Flower of Indiana, since it, and not the yellow, predominates in our orchards. The yellow, however, within five years, has been largely distributed. Tree, medium sized, spreading; wood stronger than the yellow belle-fleur, healthy, ripens its wood early, but liable to after growth in warm falls, and therefore subject to frost-blight. The tree from its habit of growth, more liable to split and break under a full crop than any tree of the orchard. One of the youngest bearers in the nursery; fruitful to a fault. Grafted on the root it kills off in winter; buds well and forms a top without difficulty. Fruit above medium and sometimes very large; color, greenish white, and, in some seasons, with a blush on the sunny side; flesh breaking at first, but when fully ripe, melting and juicy; flavor mild and delicate. It is not apt to cloy, and more can be eaten than of almost any variety. Ripe from December to March.

24. Baldwin. Works well in nursery by root or bud, and is fine for nurserymen. Top forms easily. Not upright, as Downing says, but a round spreading top with us. We give Downing's description:

"The Baldwin stands at the head of New England apples, and is unquestionably a first-rate fruit in all respects. It is native of Massachusetts, and is more largely cultivated for the Boston market than any other sort. It bears most abundantly with us, and we have had the satisfaction of raising larger, more beautiful, and highly favored specimens here, than we ever saw in its native region. The Baldwin, in flavor and general characteristics, evidently belongs to the same family as Esopus Spitzenburgh, and deserves its extensive popularity.

"Fruit large, roundish, and narrowing a little to the eye. Skin yellow in the shade, but nearly covered and striped with crimson, red, and orange, in the sun; dotted with a few large russet dots, and with radiating streaks of russet about the stalk. Calyx closed, set in a rather narrow, plaited basin. Stalk half to three-fourths of an inch long, rather slender for so large a fruit, planted in an even, moderately deep cavity. Flesh yellowish white, crisp, with that agreeable mingling of the saccharine and acid which constitutes a rich, high flavor. The tree is a vigorous, upright grower, and bears most abundantly. Ripe from November to March, but with us, is in perfection in January."

25. Michael Henry Pippin. Tree upright, with a round-shaped top; wood strong, rather slow grower, ripens its main growth of wood early, but liable to fresh growth in warm, wet falls; bears very young, every other year abundantly and not a single apple in the next year. Should not be grafted on the root; and they are rather troublesome when budded, from a disposition to make

dwarf spur-like branches, rather than upright limbs. Fruit medium sized, long, large about the base, sharpening toward the eye; color, green, clouded and black specked; flesh tender, melting; flavor rich, inclined to sweet, and very fine. Ripens from December to March.

26. Red Sweet Pippin. Tree, handsome, round topped, but rather spreading; wood strong, and vigorous growth, ripens early, tree very healthy, apt to grow with very smooth bark affording little shelter for insects; bears young, every year and abundantly. Works well in the nursery either by grafting on the root, or by budding. Fruit medium size inclining to large; color, red with grey stripes on the shaded side; flesh, breaking and firm; flavor, sweet and rich. It bakes well, is good for pies, eats well, and its kitchen and table qualities combined make it a desirable fruit. Ripe from December to April.

27. Pryor's Red. Tree, upright; wood slow growing, slender, and the branches full of small wood, healthy, not subject to frost-blight; comes very late into bearing, requiring ten or twelve years for full bearing; bears only moderate crops; every year. Difficult to work in the nursery, but does better by grafting on the root than by budding. Fruit above medium size; color, red dotted with white specks, the whole surface covered with slight bloom; flesh melting; flavor very rich and high, and by some thought to be even richer than the Golden Russet. If this apple only grew on the Vandeveer pippin tree, it would require nothing more to render it perfect. Ripens from December to March. Its keeping properties are more in danger from the *teeth* than from ordinary decay. A very saleable and popular apple which, when once had, none would consent to lose. It is unknown in New England and New York except by description; and is not even described by Downing, and but little more than mentioned by Kenrick.

28. Geeen Newton Pippin. Tree, spreading, wood slender, and slow growing; ripens early, making it often troublesome for nurserymen to procure buds fit for late work; not subject to frost-blight. The tree requires vigorous cultivation to redeem it from a feeble growth, the bark is inclined to crack on the branches and scale up, and when once roughened it is difficult ever again to make them smooth. Late coming into bearing, bears abundantly every other year. They should never be grafted on the root; they should be budded on strong healthy stocks and high up in order to do well. Fruit large, green, changing to yellow when dead-ripe; flesh firm, breaking, flavor very rich. Ripe from February to May. This apple is cultivated in extraordinary abundance at the east both for home and foreign markets. They sell in London at sixpence a piece. The farm of R. L. Pell contains 2,000 bearing trees of this variety; a note descriptive of which we give from Downing:

"One of the finest orchards in America is that of Pellham farm, at Esopus, on the Hudson. It is no less remarkable for the beauty and high flavor of its fruit, than the constant productiveness of trees. The proprietor, R. L. Pell, Esq., has kindly furnished us with some notes of his experiments on fruit trees, and we subjoin the following highly interesting one on the apple.

"'For several years past I have been experimenting on the apple, having an orchard of 2,000 bearing Newton Pippin trees. I found it very unprofitable to wait for what is termed the 'bearing year,' and it has been my aim to assist nature, so as to enable the trees to bear every year. I have noticed that from the excessive productiveness of this tree, it requires the intermediate year to recover itself—to extract from the earth and the atmosphere the materials to enable it to produce again. This it is not able to do, unassisted by art, while it is loaded with fruit, and the intervening year is lost; if, however, the tree is supplied with proper food it will bear every year; at least such has been the result of my experiments. Three years ago, in April, I scraped all the rough bark from the stems of several thousand trees in my orchards, and washed all the trunks and limbs within reach with soft soap; trimmed out all the branches that crossed each other, early in June, and painted the wounded part with white lead, to exclude moisture and prevent decay. I then, in the latter part of the same month, slit the bark by running a sharp pointed knife from the ground to the first set of limbs, which prevents the tree from becoming bark-bound, and gives the young wood an opportunity of expanding. In July I placed one peck of oyster shell lime under each tree, and left it

piled about the trunk until November, during which time the drought was excessive. In November the lime was dug in thoroughly. The following year I collected from these trees 1700 barrels of fruit, part of which was sold in New York for four, and others in London for nine dollars per barrel. The cider made from the refuse, delivered at the mill two days after its manufacture, I sold for three dollars and three quarters per barrel of thirty-two gallons, exclusive of the barrel. In October I manured these trees with stable manure in which the ammonia had been fixed, and covered this immediately with earth. The succeeding autumn they were literally bending to the ground with the finest fruit I ever saw, while the other trees in my orchard not so treated are quite barren, the last season having been their bearing year. I am now placing round each tree one peck of charcoal dust, and propose in the spring to cover it from the compost heap.

"'My soil is a strong, deep, sandy loam on a gravelly subsoil. I cultivate my orchard grounds as if there were no trees on them, and raise grain of every kind except rye, which grain is so very injurious that I believe three successive crops of it would destroy any orchard younger than twenty years. I raised last year in an orchard containing twenty acres, trees eighteen years old, a crop of Indian corn which averaged 140 bushels of ears to the acre.'"

29. RAWLE'S JANET, or *Jennetting*. Tree round topped, a little spreading and handsome. Wood strong, slow growth, short jointed, and the healthiest, perhaps, of all orchard trees. Does not bear young; but when established, a great bearer every year, unless over-loaded, when it rests a year. It is the finest of all apples to graft on the root, and should be always so propagated in the nursery; if budded, it being a late starter in spring, the stock will put out its branches before the bud, and make great trouble. Fruit medium sized; color green striped with red; roundish, but inclined to sharpen toward the eye; flesh white, melting, very juicy; flavor mild and delicate. Ripens from February to May. This is, and deserves to be, an exceedingly popular apple in all this region. The tree is remarkably healthy, it blooms ten days later than other varieties, and therefore seldom loses a crop by spring frost; but the bloom is very sensitive to frost if overtaken; the fruit is very relishful, keeps as well as the Newtown Pippin, and by many, and by the writer among the number, is much preferred to that noted variety. It has the peculiar excellence of enduring frost without material injury; a property which has enabled cultivators to save thousands of bushels of fruit which by sudden and early cold had been severely frosted.

ORIGINAL CORRESPONDENCE.

For the Indiana Farmer and Gardener.

Cows and their Milk.

We need some more systematic and thorough investigation of the characteristics of a good cow; the effects of provender of various kinds upon her milk, as respects both quantity and quality; indeed, an investigation so thorough, that its results would furnish an answer to almost any question which a reasonable man might be disposed to ask; as, Can the quantity of milk be increased, without diminishing the proportion of cream? Do fermented slops enrich the milk, or merely augment the quantity of fluid? Do they not rather impoverish the milk? Does milk which readily parts with its cream, produce butter more speedily than that from which cream separates more tardily? Is it preferable to churn the unskimmed milk, or the cream only? What is the cause of milk differing so much in quality and quantity? Is milk richer, the more remotely it is drawn from the time of calving? Why are the strippings always the most creamy? Are the color, shape, and size of a cow, criterions of merit? Has the ill shape and dwarfish dimensions of the famed Alderney breed, any necessary connection with the remarkable richness of its milk? — And I know not how many other questions which might arise in the minds of the lovers of milk, and the purchasers of cows.

I was glad to see the subject broached in a former paper, (p. 180) and hope our farmers will aid the cause of inquiry, by contributing freely what information they have. In furtherance of the object in question, I fitted up a stand of lactometers for myself, and proceeded to test the quality of the milk of cows, as convenience permitted. The annexed is a table of the results, with such additional information as might be serviceable in the enquiry before us.

There are, perhaps, about one hundred cows belonging to the town of Richmond; and if the fourteen, whose milk has been examined, offer a fair specimen of the whole herd, we should have 233¼ gallons of milk daily, equal to seventy-six quarts of cream, or sixty-four pounds of butter.

The price of cows here, varies from four to ten dollars.

By way of comparison, I will mention the quality of the milk of other cows. The Alderneys yield about twenty-one per cent. of cream; the Kerrys, an Irish breed, about eleven per cent.; some New York cows, the same. What the average of Indiana cows would prove to be, cannot be told till a more general examination is made over the State; but the per centage of our Richmond kine, rises very little over eight.

My experiments in forming the table, were made when the mean temperature ranged from 70° to 86°; and the per centage of cream was taken at the expiration of twelve hours.

No.	Fresh.	Age.	Feed.	One Milking.	Cream.
1	8 months since.	9 years.	Pasture and oats.	5 quarts,	4 per ct.
2	11 "	9 "	" "	6 "	5 "
3	7 "	6 "	" "		3 "
4	7 "	7 "	" "		7 "
5	19 "	7 "	" "	6 "	13 "
6	4 "	2 "	bran, &c.	4 "	10 "
7	5 "	7 "	"	3 "	10 "
8	2 "	7 "	"	4 "	4 "
9	16 "	3 "	"	2 "	6 "
10	7 "	7 "	bran, &c.	8 "	8 "
11	4 "	5 "	"	6 "	4 "
12	4 "	5 "	"	4 "	4 "
13	24 "	5 "	"	4 "	22 "
14	6 "	21	"	4 "	"

No. 1. One per cent. of cream in the first hour: reached its maximum of cream in two hours! leaving the milk blue.

No. 2. After the first five hours, one quarter per cent. of cream was added hourly, for twenty-four hours, when the scale showed nine per cent., and gas began to form in the the milk. In twenty-eight hours, the milk was solid.

No. 5. Thirteen and a quarter per cent. in twenty-four hours; and fourteen per cent. in forty-six hours, when the milk was sour but not solid. Milk remaining so white that the line of separation of the cream was barely visible in the most favorable light.

No. 7. Eleven and a half per cent. in thirty-six hours; milk still liquid; solid in sixty hours, and then yielding thirteen per cent.

No. 8. Fourteen per cent. in thirty-six hours; milk solid, and gas formed.

No. 9. Eight per cent. in thirty-six hours; milk liquid; solid in sixty hours; eleven per cent.

No. 12. Six per cent. in thirty-six hours; milk solid.

No. 13. Cream *contracted* to nineteen per cent in twenty-four hours. Another specimen gave twenty-five per cent. in twelve hours, and twenty-seven per cent. in forty-eight hours. Another specimen, sixteen per cent. only in twelve and twenty-four hours.

J. T. P.

For the Indiana Farmer and Gardener.

Crops in Wayne County.

It is a pity, that the laudable desire of our editor to obtain information respecting the crops in the various counties, has not been more generally responded to by our farmers, whose special business it is to furnish such accounts.

As Wayne has not given in her statistics, and no body else seems inclined to offer them, I herewith do the best I can for the county. If I misrepresent any of the crops, perhaps it may make *Agricola* speak out, and correct me; so that among us, we shall probably at least approximate to the truth.

Do our farmers see the *value* of these reports! Is it of no consequence to them, whether the State has yielded her usual supplies of breadstuffs, &c! Whether speculators have found out before them, that the product is below par; and are making extensive purchases from those whose crops are good! Whether — but I leave other queries.

If there was a simultaneous influx of statistics to the Indiana F. & G., how quickly would there be a reflux to every part of the State, to every reader's dwelling, of the whole story of the crops! Could any farmer obtain this amount of information more expeditiously and more cheaply!

Wheat. Unusually good. One of our millers informed me he had taken in about 6000 bushels from this and adjoining counties; and that another miller had received about the same quantity; that the average weight of a bushel was 62 lbs.; some reaching 65. Price, at present, 50 cts.

Corn looks well and promises a full crop, at least some has been gathered and sold at — cents a bushel.

Oats, as far as I have observed, are heavier than usual. Sold at 20 cts.

Potatoes, a full yield; and as far as tried, of fine quality. The disease of the vines mentioned on page 232, appears not to have affected the tuber. Some sold at 25 cts.

Sweet Potatoes, a full crop and fine; sales at 50 cts.

Apples. Crop small. Some Neverfails, &c., and ungrafted fruit sold at 25, 40, and 50 cts.

Peaches. None. [At Philadelphia market, peaches are so abundant this year, that they have been sold at 15 cents a basket (three pecks)—10 cents a bushel. A correspondent says: "Old and young, rich and poor have been satiated therewith; and thousands of bushels have rotted, or been thrown away;" and adds "fruit of all kinds, is very cheap." Perhaps next year, there will be a transposition of this scarcity, or nonentity rather, and abundance.]

Rye. Very little raised. I do not recollect seeing a crop this year.

Barley. A few crops. Such as I saw, looked well at harvest time. Purchases at 62½ cts. a bushel.

Melons of all kinds have been plentiful.

J. T. P.

For the Indiana Farmer and Gardener.

Lime upon Wheat—a Trial and Results.

Mr. Editor:—About the last of September 1842, I sowed a field of eight acres of wheat, and having heard much of the advantages of *liming*, I determined to try, for myself, whether the advantages were such as to warrant the labor and expense.

The wheat was first carefully screened, and about two thirds of the sowing (I sowed two bushels to the acre,) was heavily limed with air slaked lime. The remaining third was sown without lime. The work of liming and sowing was performed by myself, (and I well remember how sore and full of *cracks* and *chaps* my hands were, for the lime almost denuded them of that necessary and useful covering—the skin.) The wheat was sown after hemp, on a creek bottom, the soil being partly, and perhaps chiefly, alluvial.

The winter of 1842-3, you may remember was remarkably long, dry, and cold; the ground being frozen even until April. When it did break up, it was "with a rush;" the streams, despising their ordinary enclosures, broke over their banks and reached all over the bottoms; consequently nearly the whole of my wheat was twice inundated; the last time the water, in some portions of the field, was two feet deep. The last overflow put an end, as I thought, to my experiment in liming. Nevertheless, the wheat came out, and I had somewhat more than twenty bushels to the acre.

But, (and this is what I have been after telling you,) I could perceive no difference between the limed and the unlimed portions of wheat; either in its coming up, its subsequent growth and ripening, the size and fulness of the heads, the number of stalks on the ground, nor in any respect whatever, and I made frequent and close examinations.

I confess myself much disappointed with the result of the experiment; for I expected to see the limed portion coming up sooner, putting on a greener and more vigorous aspect, in every respect far outstripping the unlimed portion, and giving also, a larger yield.

I shall sow my wheat this year on a clover lay, in a field adjoining the one sown in 1842; but the soil is different, having more clay, and being farther removed from the creek; less alluvion—perhaps none at all.—Now does my one year's expense in liming, warrant me in incurring the expense and labor of "trying it again!" I have an impression that IT WONT PAY.

REMARKS.

Lime is used either to prepare the seed for germination, or to prepare the soil for the better growth of the seed. This latter operation it does, either by adding itself as a new ingredient, or by acting chemically upon the ingredients already in the soil.

When lime is applied *to the seed* (the seed being moist) the oxygen of the water, combining with carbon of the seed, forms carbonic acid; which, having a powerful affinity for lime, unites with it, forming a carbonate of lime. The escape of a portion of its carbon constitutes the natural preparation of a seed for growth; but why, chemists have not been able to explain.

Air-slaked lime, is lime which has combined with carbonic acid existing in the atmosphere. Unburned lime-stone is a carbonate of lime; air-slaked lime is the same, and they do not materially differ. Air-slaked lime, having no longer an affinity for carbonic acid, withdraws none from the grain to which it may be applied; and in nothing helps the germinating process. Our correspondent will therefore see the reason why his wheat did not sprout any quicker when it was limed, than when it was not. Precisely the same thing is true of other sub-

stances applied to grains. Magnesia, existing naturally as a carbonate, like lime, has its carbonic acid expelled by strong heat, and in that state applied to seeds, will arrest the germination. If exposed to the air it attracts carbonic acid and becomes again a carbonate, and useless to seeds.

Where lime is employed *upon the soil*, it is either as a mere article of vegetable food, or, as a chemical agent, to change the condition of other ingredients of the soil. All good soils contain lime; of ninety four different cultivated soils in Rhode Island analysed by Prof. C. T. Jackson, *eighty-nine* contained lime. Ruffin, in his essay on calcareous manures, says, after a large induction of fact "that all soils naturally poor, are certainly destitute of calcareous earth."—When there exists in the soil, already, enough lime for the wants of vegetation, the addition of more will produce no effect upon the crop. New lands, and old land not run down, and naturally rich in lime, may require none. But lime is applied not alone as food directly offered to vegetation, but to act upon and change the soil itself.

It *neutralizes* free acids which exist in the soil. This is done with by quick lime or air-slaked; the first combining directly with the acid—the second by liberating its carbonic acid and then combining with the acid of the soil, leaving the carbonic acid to be food for plants. It is very well known by those accustomed to use peaty substances for manures, and meadow mud, that they will rather injure than benefit soils, until their acid has been neutralized.

Lime *decomposes* vegetable fibre, and reduces tough ligneous substances, to a consideration in which they can be appropriated by plants. For this purpose *quick-lime* should be used and may be applied at the rate of from 20 to 30 bushels to the acre.

Lime enters into combination with sand or silex, forming a substance different from either of them. Even strong clays will be found to contain much silex; and lime, by combining with it, makes the soil friable or crumbling.

We now extract, from the Western Farmer and Gardener, a portion of an article by D. Lapham as to the method of applying lime.—*Ed. In. Far. and Gard.*

"There are three modes or forms in which lime may be applied to soils.

1st. Is the form of *Calcined Lime.*
2nd. In the form of *Carbonate of Lime.*
3rd. In the form of *Sulphate of Lime.*

I shall proceed to remark upon its application to soils under each of these forms.

1. *Calcined Lime.*

Before the application of lime, there should always be made an accurate analysis of the soil to which it is to be applied.—Such analysis will enable us to judge of the quantity of lime required, and guide us in the manner of its application. If the analysis should indicate a deficiency of *humus* and *calcareous* matter, and the soil should possess in other respects a proper constitution, the best and cheapest mode of restoring its fertility, will be to commence by sowing a crop of clover or buckwheat, (plants which draw but little food from the soil before ripening) which may be made to grow in poor soils by a small quantity of gypsum or ashes sown upon them after they have come up and covered the ground; and as soon as they are fully in flower, newly slaked lime, at the rate of 20 to 30 bushels to the acre, should be sown upon the ground, and the crop immediately turned under by the plow, and laid flat by the roller if necessary; a second plow should follow in the furrow of the first and turn up an additional quantity of earth upon the sod. The action between the lime and the vegetable matter aided by heat and moisture, will soon convert the sod into a suitable state for the food of plants; and by subsequent tillage it will become incorporated with the soil so as to enrich the whole mass of earth lying above the sod.

If the analysis should indicate an excess of vegetable matter in the soil, or that sterility is caused by acids, the lime should then be applied to the naked surface and plowed in and incorporated as much as possible by the use of the roller. The quantity to be applied for this purpose will require to be ascertained by experiment, and by commencing with a small quantity and increasing it, until the desired effects are produced. Generally, however, the quantity required to correct the acidity of soils is small compared with that required to act upon the vegetable matter.

Another method of applying lime to soils is by means of the compost. A farmer should always have a place appropriated to the making of compost, and should always have a quantity of lime on hand for that purpose. The compost heap should be composed of alternate layers of vegetable matter, manure from the stables, refuse straw, all animal

matter the farm may afford and lime—the whole covered with earth. With very little care and attention, a large quantity of manure may be thus accumulated and prepared for use during the course of a year.

In the State of Pennsylvania, lime has been used in Agriculture more extensively and successfully than in any other State.—Dr. Darlington has given the following mode of its application, as the general practice in that State.

It is usually obtained from the kiln in its caustic state, and deposited in heaps in the field where it is to be spread, and water sufficient to slake it to the powder is then thrown upon it. As soon as it is slaked, it is loaded into carts, and men with shovels distribute it as evenly as possible over the ground. On an ordinary soil from 40 to 50 bushels per acre are applied. A very rich soil will receive 70 or 80 bushels, or even 100 bushels to the acre with advantage. On very poor land 20 to 30 bushels per acre is deemed most advantageous to commence with. The application of lime is usually repeated every five or six years; that is every time the field comes in turn to be broken up with the plow, and as the land improves the quantity of lime is increased. The prevailing practice in Chester county, is to plow down the sod or ley in the fall or early in the spring, harrow it once, and then spread the lime, previously slaked to a powder, preparatory to planting the field with Indian corn.

Dr. Darlington also states as his experience, that a good proportion of vegetable matter adds greatly to the beneficial effects of lime; and hence our farmers are desirous to mingle as much barnyard manure as possible with their lime dressings; and to get their fields into what is called a good sod or turf, full of grass roots. Then a dressing of lime has an admirable effect. Yard manure is not generally mingled with the lime, when the latter is first applied. The practice is to lime the Indian corn ground, prior to planting that grain on the inverted sod; and the ensuing spring, to manure the same field for a barley crop, or to reserve the manure until the succeeding autumn and apply it to the wheat crop.

The cheapest method of applying lime to land, will be to mark off the field into squares by stakes 20 feet apart, and when the lime is hauled from the kiln before it is slaked, to drop half a bushel at the intersection of every square of 20 feet, taking care at the same time, on every alternate range, to drop the lime in one range opposite the middle of the space between the heaps in the other range, thus:

O O O O O O O O
O O O O O O O
O O O O O O O O

When placed in this manner, the heaps will be equi-distant from each other in all directions, and a man with a shovel can, without walking, spread the heaps so that the lime will cover the whole surface evenly and uniformly. This plan saves the labor of shovelling the lime into the cart the second time.

If more or less than fifty bushels to the acre is required, the distance between the stakes must be increased or diminished accordingly.

If the lime is applied to plowed land, the best way to slake the lime, is to cover the heaps with earth, the moisture of which, will soon reduce the lime to a fine powder. But if applied to a green crop it must be slacked with water.

2. *Carbonate of Lime.*

Under the term carbonate of lime, may be included, not only, pulverized and disintegrated limestones, but likewise all the various descriptions of marl, or any substance containing a moiety of calcareous earth. The term *carbonate of lime* conveys a distinnt and definite idea, always meaning a compound of fifty six parts of pure lime, and fourty four parts of carbonic acid; but the term *marl* is very indefinite, and requires to be qualified by some adjective, to give it an approach to definitiveness. Such as *shell* marl, *clay* marl, *marly clay*, *green sand* marl, &c. But the value of marl for agricultural purposes depends partly upon the quantity of of calcareous matter contained in it, and partly upon other component parts, which may be useful as fertilizers of the soil, or as correctives and amendments of the constitution of the soil. For example, *clay* marl will be more useful on sandy lands than on clay lands, because the clay contained in the marl will improve the constitution of the sandy soil, whilst it would injure that of the other. *Shell* marl, when obtained from recent pulverised shells, will be more valuable by reason of the animal matter which they contain, than if procured from calcined, or old decayed shells, from which the animal matters have been abstracted. The *green sand* marl, in addition to its calcareous quality, contains a large proportion of potash, which is perhaps more valuable than carbonate of lime alone.

It will be seen therefore, that in order to be able to apply marls to lands judiciously and profitably, it is an essential prerequisite, that its qualities should be ascertained, as well as the character and composition of the soil to which it is be applied; and an ac-

curate analysis of each is the only sure guide, to direct the farmer in the use of marls.

There is, however this distinction between marls and calcined or caustic lime:—the lime being perhaps always in the form of a carbonate, or lime fully combined with carbonic acid, it will not arrest and retain the carbonic acid gas, formed by the fermentation and putrefaction of the vegetable matter in the soils: but the carbonic acid, having the weakest affinity for lime of any other acid known, (except one or two,) the lime will of course combine with any acids which the soil may contain, and give out the carbonic acid with which it was combined, for the use of the growing plants. This process takes place so slowly and gradually in the soil, that growing plants are enabled to seize upon the carbonic acid as it is liberated, and appropriate it as food for the new vegetable.

Carbonate of lime, according to Sir H. Davy, does not produce that strong chemical action upon inert vegetable matter, and woody fibre, that takes place when caustic lime is added, by which they are rendered soluble, and form a nutritive food for plants.

4. *Sulphate of Lime—Gypsum.*

The mode by which gypsum acts upon plants has long been a subject of inquiry and investigation, by both scientific and practical men, without arriving until recently, at any definite or satisfactory results; and the effects recorded of its action upon plants under apparently similar circumstances, have been so various and contradictory, that the inquiry has been thereby exceedingly embarrassed.

Professor Liebig having recently announced the important fact, that rain and snow water contain a notable proportion of ammonia, it affords a satisfactory solution of this long mooted question. The sulphuric acid of the gypsum unites with the carbonate of ammonia, at the common temperature, and forms soluable sulphate of ammonia; the lime thus liberated seizes upon the carbonic acid given out by the ammonia, and forms carbonate of lime. "The evident influence of gypsum (says Liebig) upon the growth of grasses, depends only upon its fixing in the soil the ammonia of the atmosphere, which would otherwise be violatilized, with the water as it evaporates."

That this may be one of the causes of the increased fertility produced by the application of gypsum, is not controverted; but that it is the *only* cause, is questionable. In the decomposition of gypsum by carbonate of ammonia, two other salts may be formed, viz: sulphate of ammonia and carbonate of lime; and both of these salts will act upon either the undecayed vegetable matter, or the humus contained in the soil, and thereby afford a greater supply of food to the growing plants, in addition to that of supplying them with nitrogen.

The surprising effects produced by the small quantity of gypsum usually sown upon land, may be accounted for, when we consider that nitrogen forms but the one hundreth part of the substance of the grasses; and that by the decomposition of a little more than four pounds of gypsum, sufficient nitrogen is afforded for an increased product of 100 pounds of the grasses. But when to this is superadded the additional effects of the decomposed gypsum upon the food of plants, we cease to wonder at the effects produced by so small a quantity of gypsum.

There are, however, other modes by which the decomposition of gypsum in the soil may be effected. Oxalic acid, which is of frequent occurrence in soils, and which in some soils is a principle cause of sterility, has a greater affinity for lime than any other acid. When gypsum is sown upon a soil containing oxalic acid, this acid will immediately unite with lime of the gypsum, and set free the sulphuric acid, which will either be absorbed by the roots of plants, or will enter into combination with other bases, which may be in the soil; such as potash, soda, magnesia, or ammonia, in the order in which they are stated.

The carbonates of potash and soda, when present in soils to which gypsum is applied, will decompose it, by the sulphuric acid uniting with these substances, and the lime uniting with the carbonic acid, thus liberated, forming sulphates of potash and soda, and carbonate of lime.

Unleached ashes mixed with gypsum, will effect its decomposition,—the potash having a greater affinity for the acid than lime, will form sulphate of potash, and set the lime free.

Animal and vegetable manures, when in a state of fermentation, give out ammoniacal gas; and when gypsum is spread over a heap of manure, this gas combines with the sulphuric acid, forming sulphate of ammonia, and becomes fixed in the manure, and its escape into the air, is prevented; while the gypsum is decomposed, and its lime and water increase the value of the compost heap.

It will be seen, therefore, that there are several means by which gypsum may be decomposed in the soil; and it is by the action of its decomposed elements that its fertilizing effects are produced. First, by fixing in the soil the nitrogen brought down from the atmosphere in rain and snow; and secondly, by its remaining constituent parts acting upon the humus and vegetable matter in the soil, by which they are rendered avail-

able as food for the plants; and thirdly, by the water which is given out of the gypsum in the process of decomposition.

It has been objected to the repeated application of gypsum, that it eventually impoverishes the soil. This is true, if gypsum be continually applied to grasses, producing an increased growth, so as to exhaust the small quanty of humus that may have been in the soil, without adding any more to it.—Gypsum, as well as lime or marl, should always be used in connection with putrescent manures. It should either be incorporated with manure in the compost heap, or it should be applied to the soil in contact with the manure, and plowed in the soil together. After the manure has been evenly spread upon the field the gypsum should be sown upon the manure before plowing. It is an excellent plan to sow gypsum upon a green crop of clover or buckwheat, intended to be plowed under for manure. "The action of the plaster thus covered over is instantaneous, and the putridity is so certain as to cause considerable gas, which in its passage through the sod, impregnates it with all its manuring qualities, and the roots of plants shoot down and feed upon a bed of manure." It is stated in the American Farmer, that this method has been repeatedly practiced, with greater benefit than when the gypsum is sown in the ordinary manner.

When sown upon clover in the ordinary manner, it has been usual to apply one bushel to the acre, and its effect could only be seen on the crop upon which it was sown; but when applied as above, five or six bushels per acre will amply repay the expense, (where gypsum is cheap) in the permanent fertility given to the soil, and the increase of subsequent crops.

In the application of lime, marl, or gypsum to lands, it should always be borne in mind, that it causes an increased consumption of humus or the food of plants, and therefore a continued application of these substances, without adding a supply of organic matter, will soon exhaust the soil, and produce sterility. But when, at the same time you apply either of these substances, you supply the materials which the plants consume, (vegetable and animal manures) your lands will be constantly in good plight; and the lime, marl, or gypsum serves principally to digest the food, so as to prepare it for the absorbent vessels of the growing plants.

From the Louisville Journal and Dollar Farmer.

Grass.

Corn, grass, hemp, and tobacco, are the main branches of the agriculture of Kentucky. In my opinion they rank in importance as I have placed them. Corn styled (by Arthur Young the king of vegetables) as first, grass next, &c. From it all the live stock for family and domestic uses are nourished, and from it the fine condition of the various classes of our animals is mainly derived; at least it is the grand auxiliary in fitting them for market. To fine *harness and saddle horses*, fine *cattle for breeders*, *mules*, *beef*, *cattle*, *hogs*, (producing pork for the army, navy, and for commerce,) and *sheep*, grass is the cheapest support. If its great importance is admitted, it ought not to be left to *chance* to yield little or much pasturage, as the case may happen to be. Seventy-five acres of land, well and fully set with a variety of grasses of the best quality, will fatten, or keep in good condition as many head of domestic animals as will one hundred acres equally good land not so uniformly and evenly set. Of this fact, and it is a *fixed* fact, I have had some experience, and it is well worth the consideration and attention of every one that feeds domestic animals.

If a sufficiency of sound seed be sown on ground rightly prepared, at the right season, the yield of grass will be satisfactory. As early in the spring as the ground is in good working condition, I sow a full bushel of sound orchard grass seed to the acre, and immediately after three pints of red clover seed on the same ground. It is of great importance to sow a sufficiency of seed at first, and to have the ground *regularly*, *uniformly* covered. This is more important in regard to orchard grass than any other; its natural *habit is tussucky*, which is encouraged by a sparse cast of seed—hence the importance of a sufficient and uniform cast of seed at first. Tussucks being once formed, the abundant roots occupy the ground, and exclude young grass from coming up near them. Not even the white blossom weed, that thrives so well in timothy meadows, will be permitted to grow among orchard grass. It keeps out all intruders.

A lot well set with orchard grass and red clover makes the best hay for farm stock. The seed stem puts up above the heads of the clover. The seed is saved with a *cradle* or *sickle* as soon as the top seed is ripe enough. The mowing for hay may be commenced as soon as the seed is secured, or any time thereafter before frost. The seed stem only perishes at maturity, and the blades continue to grow. But where much hay is needed, cut as soon after the seed is out of the way as is convenient. Then in August cut a second crop for hay, which will be better than the first. An aftermath will follow better than was ever seen in a timothy meadow. But if one cutting will give hay enough for the farm it may be done

at any time to suit the labor of the farm. If pasturage is the grand point to be attained, this is the true basis to secure the desired *perennial* ones alluded to by Judge Buel. By the continued passing of the *hoof*, and the appliance of the *tooth*, the red clover is crippled and mainly driven out, but in comes the white clover and blue-grass, giving in this climate and like soils a perennial pasture of the best grasses now known, viz: orchard grass, red and white clover, and blue-grass.

When I sat down it was with the view of sending you a copy of Judge Buel's letter; at that time I had not so fully made up an opinion on grasses as I have since. Then I was making experiments, sowing separately, for trials, all the kinds. I would procure of native and foreign. Some that are highly prized in Europe did not succeed with me: such as *lucerne*, *sainfoin*, *burnet*, *sweet scented vernal grass*, *holcus velvet grass*, and many others. From what has passed under my own observation, I have come to the conclusion to sow orchard and red clover seed only. This is intended to apply to farm operations. I believe that timothy for hay is most profitable for commerce, but worthless, if fed to stock on a farm.

The publication of Judge Buel's letter may benefit beginners in agricultural pursuits. He was a close observer, a practical man, and considered as good authority on any subject that he would write on.

Lewis Sanders.

Grass Hills, Ky., Aug. 22, 1845.

Copy of a Letter from Judge Buel.

Albany, Sept. 1, 1837.

Sir: Your favor of the 4th came to hand in due time, as well as the parcels of native grass seeds referred to, for which I thank you. I shall sow them this afternoon. It is very desirable that more attention should be paid to our native grasses. It is but a few years since grasses were sown, the clovers and rye grasses excepted, even in Great Britain. Arthur Young was the means of turning the public attention to this subject *there*, and I hope yet to see the like among us. For *perennial* pastures we ought to sow every kind that is *indigenous*—and nutritive. By this means our pastures will be truly perennial, as food will be growing at all seasons, and as lands will sustain from seventy-five to a thousand plants on the square foot, in proportion to its fertility and the number of kinds sown. The value of our pastures may be more than quadrupled by attention to this branch of our husbandry.

The *ray* and *rye* grass are the same plant. It will not answer in this latitude, and I think not in yours; the growth is small and our summer droughts nearly annihilate it. The timothy and cocks-foot* are proper to mix with clovers for pastures, and the lucerne† is beyond every thing else, if applied to soiling—on one acre, with the aid of five acres of *very lean* pasture, I kept seven cows and four oxen from the 20th May to the 1st of August, and they were well kept. I cut the third crop for hay, and there will be a fourth to feed off.

J. Buel.

Lewis Sanders, Near Ghent, Ky.

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*Cocks foot is the common name in England for the orchard grass of the United States—the *dactylis glomerata* of the botanists.

† I have cultivated lucerne near Lexington, Kentucky, and at Grass Hills—from its high repute in Europe and the United States, I felt an anxiety to have it. After repeated trials I have to give it up. Judge Short of Ohio, attempted its cultivation with no better success

Lewis Sanders.

An Irishman.—A young lady, of much personal beauty, escorted through the streets of a city, by a fashionable gallant, passed a building where masons were at work. At this moment her sun-shade was snatched from her hand by a sudden gust of wind. Her fashionable escort hesitated to take the trouble to recover it; but, instantly, an Irishman dropped his hod and pursued the flying favorite. On returning it to the lady, he complacently remarked, "If ye had only been as strong as ye are handsome, ye would never have let it go." The young lady, with infinite delight, replied that she "knew not which to thank him for most, the service rendered, or the compliment bestowed." To which he promptly answered: "Your ladyship nade be at no pains at all, for that swate smile has paid me for both."

The Famine in South Carolina.—Distressing accounts have been received from different portions of the State—the provision crop will only be one-third of the usual quantity, and the old crop is exhausted. The price has increased so much that the poorer classes are now unable to purchase, and are living on the charity of others. A writer to the Charleston Mercury says: "I know men, who in ordinary times are called "good livers," that will not make as many pecks as they usually made barrels of corn. Men speak with fear and trembling of the prospect before them—and those who have corn, feel and know that they will not be better off than those who have none. Starving men never have been controlled by reason or the law, and we have no right to hope that they ever will be.'

Too bad.—A premium being lately offered by an agricultural society for the best mode of irrigation, and the latter word being made *irritation* by a mistake of the printer, *a respectable farmer sent his wife to claim the prize.*